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Oral lichen planus and oral lichenoid lesions - an analysis of clinical and histopathological features

Running head: Oral lichen planus versus oral lichenoid lesions

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In the oral mucosa, a precise classification of inflammatory lesions with a histopathological lichenoid inflammation represents a diagnostic challenge. Oral lichen planus (OLP) and oral lichenoid lesions (OLL) share several clinical and histopathological characteristics, therefore it is often difficult to distinguish between them. However, considering that the pathophysiologic mechanisms and the treatment approach of OLP and OLL are different, an early distinction ~~of~~ between these two diseases is meaningful.

Lichen planus (LP) is an idiopathic inflammatory disease of the skin, hair follicle, nails, and mucous membranes[1]. Cutaneous lichen planus (CLP) was observed in up to 20% of an OLP population[2], and more than 50% of patients with CLP have concomitant OLP[3].

The diagnosis of an OLP based on clinical and histopathological features has been proposed by the WHO collaborating center for oral precancerous lesions, adapted according to van der Meij and van der Waal[4,5]. Clinically, it is characterized by the presence of oral bilateral, symmetrical lesions, and of slightly raised gray-white lines (Wickham's Striae) alone, or together with plaque-like, atrophic, erosive or bullous lesions. Histologically, a lichenoid inflammation may be observed. There is another group of oral inflammatory lesions with both clinically, and histopathologically similar characteristics as OLP, but are not compatible with OLP and are typically associated with an attributable etiological factor. Different terms were used to name them[5–7]: lichen planus-like lesions, oral lichenoid lesions, oral lichenoid contact lesions, oral lichenoid drug reactions, oral lichenoid tissue reactions, lichenoid contact stomatitis. The most commonly used term is oral lichenoid lesions (OLL). The absence of a clearly attributable etiological factor is an important criterion distinguishing OLP from OLL[5–7].
In the literature, the following features distinguishing OLL from OLP have been described: a perivascular (instead of band-like) pattern of inflammation, a substantial number of plasma cells, eosinophils, neutrophils, an interruption of the stratum granulosum, presence of focal parakeratosis, and scattered apoptotic keratinocytes in all epidermal layers[8].

In a monocentric, retrospective, interdisciplinary study we have analyzed 9 clinical and 6 histopathological characteristics in 115 patients with a histologically confirmed oral lichenoid inflammation and a possible diagnosis of OLP or OLL. All consecutive cases were retrieved from the archives of our tertiary referral center during the 26-month~~s~~ study period. The diagnosis of OLL was based on the following criteria: clinically presence of reticular, and/or oral plaque-like, and/or atrophic, and/or erosive OLP-like-lesions, but without widespread distribution in the oral cavity[5–7]. Furthermore, the patients had no signs of a CLP. Histologically all had a acanthotic epithelium with

saw-tooth rete ridges, a liquefactive degeneration of the basal cells, colloid bodies, and band-like histio-lymphocytic infiltrates.

We identified 86 patients with the criteria of OLP, and 29 with OLL. In both groups, we observed a majority of women, 60 women and 26 men with OLP, 23 women and 6 men with OLL. The mean age was similar for both groups, 60 years in patients with OLP and 62 years for OLL.

Clinically we found only one significant difference, namely the presence of amalgam filling material was more frequently present and in direct contact with OLL than with OLP (p=0.002) (Table 1). OLP lesions were mainly localized on the buccal mucosa (87%). Lesions on the dorsum of the tongue (OLP n=15; OLL n=1) and of the lip (OLP n=5; OLL n=0) were almost only seen in OLP (Table 2). Histologically there was no significant difference. Similarly as previously reported [8–10], we saw more eosinophils in OLL than in OLP.

The distinction between OLL and OLP remains a challenge as both diseases share many characteristics. To get a more accurate diagnosis, a combined, thorough clinical and histopathological evaluation by an expert would be necessary.

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Table Legends

Table 1:

Presence and characteristics of dental materials in the study population, overall and by kind of diagnosis

Table 2: Clinical characteristics of the lesions, overall and by kind of diagnosis

Table 1 - Presence and characteristics of dental materials in the study population, overall and by kind of diagnosis

		Diagnosis				Total (OLP & OLL)		P**
		OLP		OLL				
		N*	%	N*	%	N*	%	
Amalgam	No	31	47.0%	7	25.9%	38	40.9%	0.06
	Yes	35	53.0%	20	74.1%	55	59.1%	
	No	31	47.0%	7	25.9%	38	40.9%	**0.002**
	Yes, all lesion(s) in direct contact	0	0.0%	5	18.5%	5	5.4%	
	Yes, no contact	7	10.6%	1	3.7%	8	8.6%	
	Yes, lesion(s) in direct contact + other lesions	28	42.4%	14	51.9%	42	45.2%	
Gold	No	52	80.0%	24	85.7%	76	81.7%	0.43
	Yes	13	20.0%	4	14.3%	17	18.3%	
	No	52	80.0%	24	85.7%	76	81.7%	0.38
	Yes, all lesion(s) in direct contact	3	4.6%	3	10.7%	6	6.5%	
	Yes, no contact	2	3.1%	0	0.0%	2	2.2%	
	Yes, lesion(s) in direct contact + other lesions	8	12.3%	1	3.6%	9	9.7%	
CMC	No	48	73.8%	17	60.7%	65	69.9%	0.20
	Yes	17	26.2%	11	39.3%	28	30.1%	
	No	48	73.8%	17	60.7%	65	69.9%	0.16
	Yes, all lesion(s) in direct contact	2	3.1%	4	14.3%	6	6.5%	
	Yes, no contact	2	3.1%	0	0.0%	2	2.2%	
	Yes, lesion(s) in direct contact + other lesions	13	20.0%	7	25.0%	20	21.5%	
Composite	No	13	20.3%	5	17.9%	18	19.6%	0.79
	Yes	51	79.7%	23	82.1%	74	80.4%	
	No	13	20.3%	5	18.5%	18	19.8%	0.14
	Yes, all lesion(s) in direct contact	1	1.6%	3	11.1%	4	4.4%	
	Yes, no contact	9	14.1%	1	3.7%	10	11.0%	
	Yes, lesion(s) in direct contact + other lesions	41	64.1%	18	66.7%	59	64.8%	

* Numbers may not add up to the total due to missing data

** Pearson's X^2 test, or Fisher's exact test where required

bold = significant

CMC: ceramo-metal crown

Table 2 - Clinical characteristics of the lesions, overall and by kind of diagnosis

		Diagnosis				Total (OLP & OLL)		P*
		OLP		OLL				
		N	%	N	%	N	%	
Type of lesion in patients	Only reticular and/or only plaque-like	32	37.2%	10	34.5%	42	36.5%	0.79
	Mixed reticular/plaque-like & erosive	54	62.8%	19	65.5%	73	63.5%	
Localisation of lesions (more than one lesions per patient)								
Buccal mucosa involvement	No	4	4.7%	5	17.2%	9	7.8%	0.003
	Unilateral	7	8.1%	7	24.1%	14	12.2%	
	Both	75	87.2%	17	58.6%	92	80.0%	
Tongue border involvement	No	60	69.8%	17	58.6%	77	67.0%	0.18
	Unilateral	9	10.5%	7	24.1%	16	13.9%	
	Both	17	19.8%	5	17.2%	22	19.1%	
Dorsum tongue involvement	No	68	79.1%	27	93.1%	95	82.6%	0.14
	Unilateral	3	3.5%	1	3.4%	4	3.5%	
	Both	15	17.4%	1	3.4%	16	13.9%	
Palate involvement	No	74	86.0%	26	89.7%	100	87.0%	0.37
	Unilateral	3	3.5%	2	6.9%	5	4.3%	
	Both	9	10.5%	1	3.4%	10	8.7%	
Mouth floor involvement	No	82	95.3%	28	96.6%	110	95.7%	0.18
	Unilateral	0	0.0%	1	3.4%	1	0.9%	
	Both	4	4.7%	0	0.0%	4	3.5%	
Lips involvement	No	81	94.2%	29	100.0%	110	95.7%	0.33
	Yes	5	5.8%	0	0.0%	5	4.3%	
Gingival involvement	No	33	38.4%	10	34.5%	43	37.4%	0.48
	Anterior region 13-23	1	1.2%	1	3.4%	2	1.7%	
	Posterior region 24-28	1	1.2%	0	0.0%	1	0.9%	
	Posterior region 14-18	4	4.7%	2	6.9%	6	5.2%	
	Generalized	32	37.2%	7	24.1%	39	33.9%	
	Several individual locations	3	3.5%	2	6.9%	5	4.3%	
	Bilateral posterior	12	14.0%	7	24.1%	19	16.5%	

* Pearson's X^2 test, or Fisher's exact test where required